

REMARKS

Favorable reconsideration of the claims pending within this application is respectfully requested.

Claims 1-25 are pending within this application. No claims have been allowed.

Claims 4-6, 8-12, 23 and 25 are rejected under 35 U.S.C. § 112, first paragraph, as allegedly indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In response, applicant has amended claims 4, 8-12, 23 and 25 to obviate the Examiner's objections to those claims. Applicant has also amended claim 6 for antecedent correspondence purposes.

Support for the amendments to claim 4 is found within the specification at paragraphs 0028 to 0029. Support for the amendments to claims 8-9, 23 and 25 is found within paragraph 0035. Due to the ambiguity noted by the Examiner with respect to "a single crystal Si-containing layer," applicant instead now uses the terminology "a Si-containing layer." Support for the amendments to claims 10-11 is found within paragraph 0034. Support for the amendments to claim 12 is found in claim 1.

Claims 1-6, 8-9, 14-16 and 21 stand rejected under 35 U.S.C. § 102(b) as allegedly anticipated by Tadashi (JP 09-064323).

Claim 7 is rejected under 35 U.S.C. § 102(b) as allegedly anticipated by, or in the alternative under 35 U.S.C. § 103(a) as unpatentable over Tadashi.

Claims 12-13, 18-20 and 22-23 stand rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over Tadashi.

With respect to all of the foregoing claim rejections over Tadashi, applicant observes that

each of claims 1, 23 and 24 recite “an oxygen dose of about 1E17 atoms/cm² or less” for fabricating a silicon-on-insulator (SOI) substrate. In comparison, Tadashi at paragraph 0004 teaches an oxygen dose of 1E18 atoms per square centimeter.

1E18 atoms per square centimeter oxygen dose is greater than an upper limit of 1E17 atoms per square centimeter oxygen dose recited by applicant in each of claim 1, claim 23 and claim 24. For that reason, applicant further asserts that claim 1, claim 23 and claim 24 may not properly be rejected under 35 U.S.C. § 102(e) as anticipated by Tadashi. Due to their dependence upon claim 1 or claim 24, applicant further asserts that the remaining claims in the foregoing rejections may also not properly be rejected under 35 U.S.C. § 102(e) as anticipated by Tadashi, or under 35 U.S.C. § 103(a) as unpatentable over Tadashi.

Claims 1-15 and 18-25 stand rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over Houston et al. (U.S. Patent No. 2002/0086463; hereinafter “Houston”).

Applicant observes that the Examiner acknowledges that Houston does not teach the thickness of a buried oxide layer, nor particular ion implantation parameters used when forming the buried oxide layer. Nonetheless, the Examiner asserts that insofar as suggestive thicknesses for Houston’s porous layer are in the nanometer range, Houston implicitly teaches a similar thickness for the buried oxide layer. Applicant observes that Houston at paragraph 0016 teaches that the thicknesses of the porous layer may be in a range of nanometers to microns, which is indicative of a greater thickness than the nanometers thickness proposed by the Examiner. Since a thickness in the micron range is greater than the “100 nm or less” thickness recited by applicant within claim 1, claim 23 and claim 24, applicant asserts that claim 1, claim 23 and claim 24 may not properly be rejected under 35 U.S.C. § 103(a) as unpatentable over Houston. Due to their dependence upon claim 1 or claim 24, applicant also asserts that the remaining claims in the

foregoing rejection may also not properly be rejected under 35 U.S.C. § 103(a) as unpatentable over Houston.

Claims 1-25 stand rejected under 35 U.S.C. § 102(e) as allegedly anticipated by Bendernagel et al. (U.S. Patent No. 6,800,518; hereinafter “Bendernagel”).

The Examiner has suggested that the foregoing rejection might be overcome with an appropriate showing under 37 C.F.R. § 1.131. To that end, an appropriate declaration under 37 C.F.R. § 1.131 is unexecuted appended.¹

Claims 1-25 stand rejected on the ground of nonstatutory obviousness type double patenting over Bendernagel, optionally in view of Sadana et al. (U.S. Patent No. 5,930,643; hereinafter “Sadana”).

In response to the foregoing nonstatutory obviousness type double patenting rejection, applicant has appended an appropriate terminal disclaimer.

Claims 1 and 12-22 stand rejected under 35 U.S.C. § 102(b) as allegedly anticipated by Sadana.

Applicant observes that the Examiner asserts that Sadana’s initial ion implanting with oxygen provides a region of vacancies or voids in a semiconductor structure, in accordance with applicant’s claim 1, claim 23 and claim 24. With the Examiner’s assertion applicant respectfully disagrees insofar as applicant asserts that a person of ordinary skill in the art would understand that oxygen ion implanting into a semiconductor substrate does not expressly or inherently cause voids within the semiconductor substrate within the context of applicant’s claimed invention, but rather such ion implantation may provide for amorphization of a semiconductor substrate.

The Examiner cites Sadana et al. (U.S. Patent No. 6,222,253; hereinafter Sadana II) and

Roitman et al. (U.S. Patent No. 6,204,546; hereinafter Roitman) as substantially equivalent to Sadana, while more specifically teaching voids and vacancies. Since the Examiner has not explicitly framed a rejection of applicant's claims within the context of Sadana II or Roitman, applicant questions whether a response to the Examiner's assertions with respect to Sadana II and Roitman is appropriate. Nonetheless, applicant does note that within claim 7 applicant recites a vacancy or void porosity of greater than 0.01% which is presumably neither taught nor contemplated by Sadana, Sadana II or Roitman within the context of ion implantation dosages taught therein.

Thus, since each and every limitation of the claims is not taught in Sadana, in particular with respect to creation of voids or vacancies in a semiconductor structure, applicant asserts that claim 1, claim 23 and claim 24, and the remaining claims dependent thereupon, may not properly be rejected under 35 U.S.C. § 102(b) as anticipated by Sadana.

Claims 1 and 12-22 stand rejected under 35 U.S.C. § 102(e) as allegedly anticipated by Norcott et al. (U.S. Patent No. 6,486,037; hereinafter "Norcott" which the Examiner asserts is the child of Sadana).

Given that the Examiner asserts that Norcott is a child of Sadana, applicant asserts that the same distinctions that apply above to Sadana with respect to applicant's claims also apply to Norcott with respect to applicant's claims (i.e., neither Norcott nor Sadana expressly or inherently teaches void or vacancy formation within a semiconductor structure). For that reason, applicant also asserts that claim 1, claim 23 and claim 24, as well as claims dependent thereupon, may also not properly be rejected under 35 U.S.C. § 102(e) as being anticipated by Norcott.

Claims 1 and 12-22 stand rejected on the ground of nonstatutory obviousness-type double

¹ An executed copy of the declaration under 37 C.F.R. §1.131 will be provided in due course.

patenting as being unpatentable over claims 1-39 of Norcott.

Applicant appreciates the Examiner's indication that the instant claims and Norcott's claims are not identical. In response, applicant has appended herewith a suitable terminal disclaimer with respect to Norcott.

Claims 1-25 stand provisionally rejected on the ground of nonstatutory obviousness type double patenting over claims 1-38 of copending application 10/674,648 optionally in view of Houston or Sadana.

Applicant appreciates the Examiner's indication of the foregoing provisional rejection. Applicant also appreciates that the Examiner acknowledges that the claimed subject matter within copending application 10/674,648 and the instant application is not identical. In response, applicant has appended herewith a suitable terminal disclaimer with respect to copending application 10/674,648.

Claims 1-25 stand provisionally rejected on the ground of non-statutory obviousness-type double patenting as being unpatentable over claims 14-18 of copending application number 11/164,632, Chidambarrao, et al. (U.S. Pub. No. 2007/0122956; hereinafter "Chidambarrao") in view of Sadana.

Applicant appreciates the Examiner's indication of the foregoing provisional rejection. Applicant also appreciates that the Examiner has indicated that at least in some aspects Chidambarrao's claims are narrower than applicant's. In response, applicant has appended herewith a suitable terminal disclaimer with respect to copending application 11/164,632

In light of the foregoing remarks, applicant respectfully requests reconsideration of, and early allowance of, the claims pending within this application.

Respectfully submitted,



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